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Media Effects, History of

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The established history of media effects research is characterized by a series of phases marked by fundamental paradigm shifts (see McQuail 1977, 72–74; 2005, 457–462; Lowery & DeFleur 1983, 22–29; Severin & Tankard 2001, 262–268; Baran & Davis 2006, 8–17). Each of these phases is associated with particular concepts, researchers, studies, and historical circumstances that influenced ideological development regarding media effects (→ Communication as a Field and Discipline).

THE FOUR PHASES OF MEDIA EFFECTS PARADIGMS

The *first phase*, from World War I to the end of the 1930s, was characterized by the assumption that the effects of the media on the population would be exceedingly strong. The media were credited with an almost limitless omnipotence in their ability to shape opinion and belief, to change life habits, and to mold audience behavior more or less according to the will of their controllers (McQuail 2005, 458). The power of media messages over unsuspecting audiences was described in drastic terms: the mass media supposedly fired messages like dangerous bullets, or shot messages into the audience like strong drugs pushed through hypodermic needles. These descriptions gave rise to the "*hypodermic-needle concept*" (Berlo 1960, 27), the "magic bullet theory" (Schramm 1973, 243), and the

"transmission belt theory" (DeFleur & Ball-Rokeach 1982, 161). Instinct psychology and the theory of mass society were interpreted to show that people in urbanized and industrialized society were rootless, alienated, and inherently susceptible to manipulation. As a result, they were defenseless against and at the mercy of the capricious stimuli of the media – particularly as early ideas maintained that the mass media were run primarily by people and organizations that were deliberately trying to exert a targeted influence upon recipients (→ Stimulus–Response Model).

The *second phase* of the standard history lasted approximately from the end of the 1930s to the end of the 1960s and was distinguished by the assumption that the media were largely not influential. The research group of → Paul F. Lazarsfeld ushered in the deconstruction of the bullet theory. The results of their empirical, social-scientific election study, *The people's choice* (1944), moved interest away from what the media did to people and toward what people did with the media. Rather than seeing a society of fragmented individuals receiving all-powerful messages from the mass media, the view shifted to one of a society of individuals who interacted within groups and thus limited the effects of media messages. Early on, Lazarsfeld et al. (1944) defined all three key concepts that Joseph T. Klapper (1960) later united and used as the basis of his *limited effects theory*. These three concepts also characterized the second phase of effects research. They state that: (1) people use → selective exposure and selective perception to protect themselves from media influences, accepting almost exclusively only such information as corresponds to their previously established attitudes (→ Selective Perception and Selective Retention); (2) → opinion leaders initiate a → two-step flow of communication by absorbing ideas and arguments from the mass media and then communicating these – transformed – ideas to less active individuals; (3) social group formation enhances the role that → interpersonal communication plays in protecting an individual member from a change of opinion, as members do not wish to lose membership in their relational group (→ Katz, Elihu).

The *third phase*, from the end of the 1960s through the end of the 1970s, was characterized by the *rediscovery of strong media effects*. According to standard media effects history, an essay by → Elisabeth Noelle-Neumann entitled "Return to the concept of powerful mass media" (1973) may be considered to have set the program for the movement into the third phase (see Severin & Tankard 2001, 264; McQuail 2005, 460). A number of highly regarded studies showed that it was possible for the media to overcome some selectivity processes in a television-saturated environment. Near the end of the 1940s Herbert Hyman and Paul Sheatsly (1947) published a study in *Public Opinion Quarterly* entitled "Some reasons why information campaigns fail"; then, a quarter of a century later, Harold Mendelsohn (1973) used the same forum to proclaim the exact opposite: "Some reasons why information campaigns can succeed." Three distinct features are attributed to this phase: more sophisticated methods of analysis (→ Research Methods), more specific hypotheses, and more highly differentiated theoretical approaches. Thus, survey data and content analysis data could be combined long-term with the help of time-series analyses or panel design studies (→ Survey; Content Analysis, Quantitative). In addition, effects research since that time has been less focused on crude changes in attitude or behavior, and more interested in subtle changes in our *perception* of the world.

The *fourth phase* of the standard media effects history extends through to the present time and is characterized by *"negotiated" or "transactional" effects* (McQuail 2005, 461). Now the central premise maintains that the media exert their greatest influence when they become involved in the process of constructing sense and meaning. Typical theories connected with this new approach are social → constructivism, → cultivation theory, framing (→ Framing Effects), and → information processing theories. McQuail considers research in this vein to be driven by two insights:

> First, media "construct" social formations and even history itself by framing images of reality (in fiction as well as news) in predictable and patterned ways. Second, people in audiences construct for themselves their own view of social reality and their place in it, in interaction with the symbolic constructions offered by the media. The approach allows both for the power of media and for the power of people to choose, with a terrain of continuous negotiation in between, as it were. (McQuail 2005, 461)

CHALLENGES TO THE FOUR-PHASES MODEL

The oversimplified account of the received view of media effects history has been criticized harshly in recent times. Lang and Lang (1993, 93) called the alleged sequence of phases unrealistic "paradoxes" that feigned contradictions that had never existed. Instead, they maintained that "a considerable continuity" had been prevalent in the research community over the decades (Lang & Lang 1981, 662). Even proponents of the phase model felt forced to play down its heuristic value as time progressed (see McQuail 2005, 460). It seems that the model was able to establish itself so firmly because it offered a clear summary of a complex developmental process. However, current thought considers it evident that, in every period, studies could be identified that indicated limited or powerful effects – depending on what → operationalizations, conceptualizations, definitions, measurements, designs, and variables were used (→ Measurement Theory; Media Effects, Strength of).

Likewise, careful reanalyses of research literature from the first phase of effects studies show that "few, if any, reputable social scientists in the pre-World War II era . . . worked with what was later described as the hypodermic needle model" (Lang & Lang 1981, 655). Even the empirical findings from the second phase, upon closer inspection, show no justification for an overall verdict of media impotence (Lang & Lang 1981, 659). Instead, numerous studies from that time indicating the presence of media effects can be identified. Due to the prevailing opinions of the time, however, no notice was taken of these findings. Two main factors explain the successful run enjoyed by the "*minimal effects myth*": first, there was an exaggerated concentration of a limited range of effect types (especially short-term attitude change during election campaigns); second, there was a one-sided and inappropriate interpretation of the results of three key studies, which further secondary literature adopted without additional review.

In the first of these key studies, Lazarsfeld et al.'s *The people's choice* (1944), the data in no way unequivocally supported both central investigative findings – the importance of interpersonal communication ("two-step flow") and of reinforcement instead of chance ("minimal effects"). In spite of the fact that 61 percent of the interviewees named newspaper (23 percent) and radio (38 percent) as their "most important sources" of

information during the election, the authors alleged that it is not the media but *people* who can move other people (although less than one fourth cited a personal source as important). Moreover, in spite of the fact that 8 percent of those questioned did indeed alter their voting decision because of media influences, the authors interpreted this as evidence for a lack of effect (see Chaffee & Hochheimer 1985, 273, 279). Not only is 8 percent a considerable change, it should also be noted that the authors were concerned only with voting intention and ignored other possible political effects where media impact might have been even greater (→ Election Campaign Communication).

In the second key study, *Personal influence* (1955) by Katz and Lazarsfeld, an inappropriate claim was made to the effect that all previous effects research had been based on the following framework: "that of the omnipotent media, on the one hand, sending forth the message, and the atomized masses, on the other, waiting to receive it – and nothing in between" (1955, 20). In retrospect, Katz (1987, S35) admitted that early empirical communications research seems not to have based its efforts on the idea outlined in 1955, which propounded an omnipotent media and the stimulus–response model arising from this assumption. Nevertheless, Katz and Lazarsfeld's book created a mythos that has definitively influenced the history of this field even up to today (see Delia 1987, 65–66).

BIASED PERCEPTIONS OF MEDIA EFFECTS

From Klapper's synopsis *The effects of mass communication* (1960), the third key work of that era, secondary literature adopted primarily those conclusions that pointed to minimal effects, failing to subject these inferences to review. However, Klapper did also clearly define conditions under which the media could develop strong effects. Even so, since he provided only very few pieces of evidence and examples for these in his one-sided presentation, they made no impression on the readers of the time or on later generations of research (see Perse 2001, 25). In addition, Klapper worked as director of social research for CBS, one of the largest media corporations in the United States (→ Television Networks), and media companies were uninterested in evidence supporting the strength of the media. Quite the contrary: they were interested in evidence proving the insignificance of media effects and used Klapper's book to argue against regulation (Perse 2001, 28).

The apparent change of mind leading to the rediscovery of strong effects may also be better explained by factors outside of, rather than within, the research world. The rapid spread of television during the 1960s and 1970s lent a political dimension to the field of effects research (→ Television: Social History). Influential commercial and political forces increasingly accused the media of failing to respect these entities' interests and, consequently, of distortion. Such allegations drew heightened public attention to the effectiveness of the media.

Today, a growing number of scholars agree that the established standard history of the field is misleading because it tends to ignore those findings that do not fit neatly into the stage-by-stage scenario. Many authors (e.g., Lang & Lang 1981; Chaffee & Hochheimer 1985; McLeod et al. 1991; Wartella 1996; Bryant & Thompson 2002) have thus concluded that the development of mass media effects research did not move in pendulum swings from "all-powerful" to "limited" to "rediscovered powerful" to "negotiated" effects. Bryant and Thompson (2002, 42, 58) argue that the body of media effects research from

the beginning showed overwhelming evidence for significant effects. Thus, the sum total of all these considerations yields the conclusion that the history of media effects research still waits to be written (see Wartella 1996, 179).

SEE ALSO: ▶ Communication as a Field and Discipline ▶ Constructivism ▶ Content Analysis, Quantitative ▶ Cultivation Theory ▶ Election Campaign Communication ▶ Framing Effects ▶ Information Processing ▶ Interpersonal Communication ▶ Katz, Elihu ▶ Lazarsfeld, Paul F. ▶ Measurement Theory ▶ Media Effects ▶ Media Effects, Strength of ▶ Noelle-Neumann, Elisabeth ▶ Operationalization ▶ Opinion Leader ▶ Research Methods ▶ Selective Exposure ▶ Selective Perception and Selective Retention ▶ Stimulus–Response Model ▶ Survey ▶ Television Networks ▶ Television: Social History ▶ Two-Step Flow of Communication

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Media Effects Models: Elaborated Models

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The study of media effects has driven mass communication research for most of the twentieth and twenty-first centuries. Scholars have developed, tested, and supported various theories of → media effects. The key to this research is uncovering the explanation for the way mass media exposure translates into effects. Over the history of our field, the study of media effects has been driven by generalized views about how media effects occur. These general views serve the field as models, or simplified representations of the media effects process. Different models about media effects place different weight on either media content or the audience in providing the central explanation of media effects. Moreover, different models focus on different variables as central to understanding media effects (→ Media Effects, History of).

The *first model* of media effects emerged in the early twentieth century. This model was grounded in sociological views of the mass society and psychological interests in stimulus–response models. This first model has been termed the "hypodermic needle" or direct effects model, because mass communication was seen as an effective stimulus to evoke predictable responses from isolated and helpless audiences.

A *second model* developed around 1940. This model, limited effects, reflected researchers' beliefs that media's dominant effect was reinforcement. According to this model, because of the audience's tendency toward → selective exposure, attention, perception, and recall (→ Selective Attention; Selective Perception and Selective Retention), most media messages were filtered and rejected unless they supported pre-existing beliefs and attitudes (e.g., Hovland et al. 1949; Katz & Lazarsfeld 1955).

A *third model* grew out of the rapid adoption of television in the 1960s (→ Television: Social History). Television viewing grew steadily and content analyses revealed that there were few thematic differences in the content of the three dominant channels. Scholars began to believe that television could overcome selectivity processes. That is, exposure to television insured exposure to particular themes and images. This model is characterized as a return to the era of powerful effects.

The widespread adoption of → cable television, remote control devices, and the broadband world wide web (→ Internet) have shifted media use away from a static, time-and-space-bound delivery mode to one that allows the audience to select what media to

use whenever they choose. Now, media researchers accept that audiences can be powerful and dominant in the media effects process. Effects, however, are not viewed as limited. Instead, they are enhanced when media content intersects with audiences' interests and personal characteristics.

FOUR GENERAL MODELS OF MEDIA EFFECTS

Our field is now marked by four dominant models of media effects: direct effects, conditional effects, cumulative effects, and cognitive automatic effects.

Direct Effects

The direct effects model focuses on the impact of media content variables to stimulate fairly automatic and predictable responses in the audience. The audience is viewed as reacting involuntarily and automatically to certain features of media content. This model is not to be confused with the outdated hypodermic needle model of the early part of the twentieth century. People are not necessarily viewed as helpless, as in the early years of the hypodermic needle model, but they are seen as unable to resist the attentional "pulls" of some aspects of media content. The direct effects model focuses research attention on aspects of media content that impact audiences' → perceptions and feelings (→ Emotion).

Most research focuses on the impact of *structural features of media content* that stimulate automatic responses, such as the orienting response (involuntary attention), visual attention to the screen, sounds that stimulate attention and evoke automatic responses, and media content that evokes fear. Other research has focused on aspects of media content that increase automatic arousal (→ Excitation and Arousal), or physiological energizing responses. Still other research considers how the degree of realism depicted in the media can lead to audience effects.

Theoretical approaches that fall under this model of media effects include the → limited capacity model of message processing (e.g., Lang 2000), which focuses on structural and content aspects of media that elicit automatic motivational and cognitive responses; salience theory, which focuses on how location and placement of promotional messages affect attention (e.g., Eastman & Newton 1998); research on attention to and memory for "bad" news (e.g., Newhagen & Reeves 1992); and research on "presence" (e.g., Lee 2004), which focuses on how the sensory and personal realism of media content can evoke a sense of "being in" an environment or "being with" another (→ Information Processing).

Conditional Effects

The conditional effects model places emphasis on the audience as the location of understanding media effects. Like the limit effects model of the mid-twentieth century, this model focuses on *audience selectivity* (selective exposure, attention, perception, and recall), social influence, and individual differences. This model differs from the limited effects model in that it recognizes that media effects are common, but conditional on aspects of the audience. That is, audience characteristics can determine whether and how

media content will have an impact. Media effects are not uniform; different people can be affected quite differently by the same media content.

This model is *audience-centered*, so important variables all relate to aspects of the audience. Traditional variables, such as demographics and social categories (e.g., sex, age, education), are important because they represent common frames of reference, common experiences, and common interests of similar groups of people that can facilitate or moderate media effects (→ Audience). Social relationship variables (e.g., group membership, audience makeup) are useful in this model because they represent the social connections and interpersonal interactions that can facilitate or mediate media effects. Individual difference variables (e.g., personality, prior experiences, mood) allow researchers to uncover how unique attributes and experiences can be conditional forces in media effects (→ Mood Management). Theories of media effects that fall under this model include knowledge gap (Tichenor et al. 1970, in its focus on socio-economic status; → Knowledge Gap Effects), social learning theory (e.g., Bandura 2002, in its focus on observer attributes; → Observational Learning), and → uses-and-gratifications approaches to media effects (e.g., Rubin 2002).

Cumulative Effects

The cumulative effects model focuses on *consonance and repetition* of some themes, images, and frames across media content that override the ability of the audience to avoid exposure (→ Consonance of Media Content; Framing Effects). This model grows out of the third model in the history of media effects research, which recognized the power of television to overcome selective exposure. Cumulative effects are not based on a single exposure; instead effects emerge over time, on the basis of repeated exposure to consistent messages across channels or across media. Effects are typically cognitive; i.e., cumulative exposure leads people to develop beliefs based on the content they consume. These beliefs mirror media content.

Media content's presentation is central to this model. Cumulative effects are based on consistently presented images, themes, and frames that are presented over time and across media channels. Two theories exemplify the cumulative effects model. *Agenda setting* (e.g., McCombs & Shaw 1972; → Agenda-Setting Effects) holds that news media have the power to set the audience agenda because of the consistency of news coverage across different channels. Cultivation (e.g., Gerbner & Gross 1976) is based on the evidence of content analysis that some of television's content presents a world quite different from the real one. As a result, heavy viewers of television begin to believe that the real world is similar to the television world. This model's assumption that some media content is so ubiquitous that it cannot be avoided needs to be tested in new media environments of increased channels and media outlets and the greater content control afforded audiences.

Cognitive Automatic Effects

This model applies the notion of *priming* to the media effects process (→ Priming Theory). Priming refers to the activation of mental concepts as a result of exposure to media content. This model recognizes that much media use grows out of desires for relaxation and entertainment, which suggest that the audience is less mentally active

during exposure. The less active audience tends to engage in more automatic and effortless mental processing. Media content can serve as a potent prime to activate thoughts that affect interpretation and reaction to related environmental stimuli. The *cognitive automatic model* encompasses the several theoretical approaches used to explain priming effects: spreading activation, schema activation, and mental models (Roskos-Ewoldsen et al. 2002) as well as heuristic or peripheral processing (Petty et al. 2002; → Elaboration Likelihood Model). This model has been used to explain short-term effects of media violence, effects of a media agenda on presidential approval ratings, short-term effects of stereotypical media content, and cultivation effects.

Variables important to this model are ones that increase the priming potential of media content. In general, more salient content is likely to prime. Salience is reflected in prominence, intensity, movement, repetition, realism, and emotion. Salient audio and visual content can both prime automatic processing. Audience variables are less important to this model, because the audience is viewed as less cognitively active.

SEE ALSO: ▶ Agenda-Setting Effects ▶ Audience ▶ Cable Television ▶ Consonance of Media Content ▶ Cumulative Media Effects ▶ Elaboration Likelihood Model ▶ Emotion ▶ Excitation and Arousal ▶ Framing Effects ▶ Information Processing ▶ Internet ▶ Knowledge Gap Effects ▶ Limited Capacity Model ▶ Media Effects ▶ Media Effects: Direct and Indirect Effects ▶ Media Effects, History of ▶ Mood Management ▶ Observational Learning ▶ Perception ▶ Priming Theory ▶ Reciprocal Effects ▶ Selective Attention ▶ Selective Exposure ▶ Selective Perception and Selective Retention ▶ Television: Social History ▶ Uses and Gratifications

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Media Effects, Strength of

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Twenty-first-century mass communication scholars rarely question the existence of media effects. Research has presented significant and consistent evidence that the mass media have noticeable and meaningful effects. Evidence comes not only from the accumulation of the body of different studies, but from the various meta-analyses that organize various research studies and combine their findings to assess the direction and strength of media effects. In general, research finds that media effects are modest, small to moderate in size. Conclusions about the strength of media effects, however, must be tempered by considerations of → research methodology (laboratory compared to more natural settings), the effects of different types of media content (pro-social compared to antisocial; → Media Production and Content), and the effects of routine compared to unusual content (→ Media Effects; Media Effects, History of).

THE STRENGTH OF MEDIA EFFECTS

Meta-analysis is the primary method for determining the strength of media effects. Meta-analysis is a research technique that locates published and unpublished studies about different media effects. Then, the results from those studies are combined and averaged to ascertain the overall size of effects, across a range of studies conducted by many different researchers at different times, in different places, and with different samples (→ Meta-Analysis). The strength of this approach is its cumulative character; combining a range of studies allows not only for conclusions about strength of impact, but also for researchers to begin to be able to generalize about the types of people affected and to identify the different variables that might enhance or mitigate media effects.

Meta-analyses reveal that media effects can best be described as small to moderate. Two statistical measures are typically used to describe the strength of media effects. Pearson's correlation (r) ranges from −1.00 to 1.00, where values closest to either end point are the most substantial. Values close to 0.0 mean that there is no connection between media exposure and the effect. A second measure, d, is a measure of the difference, in standard

deviations, between the control group and the experimental group. Larger values for *d* indicate larger effects (→ Statistics, Explanatory).

In some cases, media's impact is fairly strong. Recent meta-analyses (see Preiss et al. 2007), for example, show that the → *agenda-setting effect* is among the largest of our field. Overall, across 90 studies, the relationship between the media and audience agendas is $r = 0.53$.

Various meta-analyses have identified moderate effects of *media violence* (→ Violence as Media Content, Effects of). In 1986, exposure to television violence accounted for about 0.3 of a standard deviation ($d = 0.30$) in negative effects. Updated meta-analyses find that impact has grown a bit larger. In 1994, scholars found that the effect size of television violence was $d = 0.65$ ($r = 0.31$). Replication of meta-analyses of the effects of media violence on observed aggressive behavior also reveal a small increase in effect sizes. A 1991 meta-analysis located an effect size of $d = 0.27$; the updated 2007 meta-analysis found an effect size of $d = 0.35$.

Other media effects are a bit smaller. The negative effects of *pornography* range from $r = 0.11$ to $r = 0.22$ (→ Sex and Pornography as Media Content, Effects of). The connection between playing video games and aggression is $r = 0.15$. The effects of stereotyped media content and sex-role stereotyping range from $r = 0.11$ to $r = 0.31$ across surveys and experiments as well as studies conducted in the US and other countries.

Media content has *pro-social effects*. Pro-social messages targeted toward children have a moderate effect: $r = 0.23$. Media campaigns designed to encourage people to adopt healthy behaviors and practices have stronger impacts ($r = 0.12$) than those encouraging cessation of unhealthy behaviors ($r = 0.05$).

INTERPRETING THE EVIDENCE

The statistical evidence for media effects is modest, considering the amount of *time spent with various media*. Here is a context for interpreting the size of media effects. Meta-analyses in other fields have found that the effect of gender on height is $d = 1.20$; the effect of one year of elementary school on reading ability is $d = 1.00$; tutoring on math skills is $d = 0.60$; drug therapy on psychotics is $d = 0.40$ (Hearold 1986). For *r*, squaring the value allows us to see how much of the variance between two variables is accounted for. So, meta-analyses show that exposure to pro-social messages accounts for 5.3 percent of the variance in pro-social actions in children.

There is evidence the *strength of media effects varies*. Effects of media violence are larger in laboratories ($d = 0.80$) than in the real world ($d = 35$ in natural experiments and $d = 0.38$ in surveys). The control and precision of the laboratory experiment magnifies the effects of exposure to media content. There is also evidence that effects of pro-social media content are larger than those of antisocial media content. Moreover, effects can be stronger when encouraging adoptions (such as seat belt use, fruit and vegetable consumption) than when promoting behavior cessation (e.g., smoking, alcohol use; → Observational Learning). Clearly, media have a larger impact on socially encouraged attitudes and behaviors and those that are easier to enact. There is also evidence to suggest that unusual media messages are likely to have a greater impact than routine ones. Research on Magic Johnson's 1991 announcement that he was HIV-positive had much larger effects

on knowledge about HIV and AIDS, attitudes toward HIV-positive people, and desire for more information about HIV than more routine messages (→ Exemplification and Exemplars, Effects of). Salient, or atypical messages, are likely to have greater impact.

The effects of mass communication might be small to moderate, but they are certainly quite meaningful because of the size of the audience and the importance of the outcomes. While the effects of media health campaigns, for example, are smaller than the effects of clinical interventions ($r = 0.09$ compared to $r = 0.27$), media campaigns are more cost-effective and reach far more people (→ Health Communication). The small effects found for media health campaigns cannot be dismissed, because even small effects sizes mean that large numbers of people have been influenced. Those who conduct research on television violence estimate that eliminating television violence could reduce aggression in society by small but significant amounts. Small effects of mass communication translate into large groups of people being affected.

PROBLEMS IN INTERPRETING EVIDENCE OF MEDIA EFFECTS

Despite the presumption of media effects and the evidence drawn from meta-analyses, there are still some *areas of disagreement regarding media effects*. The most substantial media effects are found in laboratory experiments (→ Experiment, Laboratory). There is a good deal of value in conducting laboratory experiments because researchers can control the type and amount of media exposure and assess time order, or causation. The control of laboratory settings, though, is also a weakness. Exposure to media content in a laboratory setting is unnatural and cannot account for selective exposure. Experimental participants might be shown television content (e.g., violence or sexual content) that they would never seek out on their own. Much media content is consumed in the presence of friends and families, who are not able to exert influence in laboratory settings (→ Media Effects: Direct and Indirect Effects). Moreover, the dependent measures used in laboratories are often quite artificial. Hitting Bobo dolls or pushing buttons to "shock" people don't translate to real-life actions. Hovland (1959) also points out that experiments typically focus on short-term effects, measured fairly soon after exposure to media content. The nature of experimental control cannot assess the endurance of effects after the experimental session (→ Media Effects Duration).

Laboratory experiments can also introduce *experimenter effects*, or effects that are due to the actions of the experimenter, rather than the experimental stimulus. When an experimenter presents content to research participants, they might assume that the experimenter approves of the content, even if it is violent, sexual, or stereotypical. As Hovland (1959) noted about persuasion research, messages presented in a laboratory are likely to have stronger effects because of the credibility of the experimenter. Participants might also assume that the various actions presented to them in a laboratory, even if they are inappropriate or undesirable, are also sanctioned by the experimenter. Finally, Hovland explains that researchers often select media content designed to magnify differences between experimental and control conditions. These extreme selections are often atypical of media content seen in the real world. Rosenthal (1979) estimated that various experimental effects range from $d = 0.23$ to $d = 1.78$. So, experimental effects could account for much of the media impact of laboratory settings.

ARE MEDIA EFFECTS STRONGER THAN EVIDENCE SUGGESTS?

Despite concerns about the problems with laboratory research, most scholars agree that media effects are substantial and meaningful. There are several reasons to believe that research underestimates media effects because of methodological imprecision and conflicting theoretical forces.

Outside of the laboratory, *measures of media exposure are imprecise* and subject to a good deal of measurement error (Webster & Wakshlag 1985; → Readership Research; Rating Methods). Media use is typically a private activity and often inattentive. Assessing media exposure by asking people to estimate how much time they spend is fraught with inaccuracy. Even observations of media use cannot assess level of attentiveness. Media effects might be stronger if researchers could access accurate measures of attentive media use.

For ethical reasons, researchers often *limit dependent variables* to those that cannot harm research participants (→ Research Ethics). So, studies rarely give participants opportunities to enact behaviors that might reflect media impact. Instead, researchers assess attitudes, perceptions, and reactions to hypothetical situations (→ Attitudes, Values, and Beliefs, Media Effects on). These "diluted" measures might not be the most valid and accurate ways to assess the impact of the mass media.

Most theories of media effects assume a linear relationship between media exposure and impact, that is, as exposure to media increases, so will the likelihood of the effects of that content. Nonlinear processes are often not explored. Some media effects processes might be curvilinear, that is, effects might increase to only a certain point (→ Linear and Nonlinear Models of Causal Analysis). Or, there might be a threshold process, so that media content has no impact until a threshold level of exposure is reached. Greenberg (1988) proposed a *drench hypothesis* of media effects. Instead of media content having a "drip, drip" cumulative effect, Greenberg suggests that some media images are so powerful that they command attention and have strong effects.

The main reason, however, that media effects appear limited is that it is *impossible to isolate media's impact* in most developed societies. It is nearly impossible to find someone who has not been exposed to mass media. And, even those people who don't watch much television or read newspapers or surf the world wide web interact regularly with others who do. Media's influence can go beyond direct exposure to the media; it is filtered through other social contact.

SEE ALSO: ▶ Agenda-Setting Effects ▶ Attitudes, Values, and Beliefs, Media Effects on ▶ Exemplification and Exemplars, Effects of ▶ Experiment, Laboratory ▶ Health Communication ▶ Linear and Nonlinear Models of Causal Analysis ▶ Media Effects ▶ Media Effects: Direct and Indirect Effects ▶ Media Effects Duration ▶ Media Effects, History of ▶ Media Production and Content ▶ Meta-Analysis ▶ Observational Learning ▶ Rating Methods ▶ Readership Research ▶ Research Ethics ▶ Research Methods ▶ Sex and Pornography as Media Content, Effects of ▶ Statistics, Explanatory ▶ Violence as Media Content, Effects of